1 EU - TYPE EXAMINATION CERTIFICATE

2 **Product or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU – Annex III**

3 EU - Type Examination Certificate No.: **TRAC12ATEX0034X (incorporating variations V1 to V5)**

4 Product: **Gas Moisture Analyzer, OptiPEAK TDL600**

5 Manufacturer: **Michell Instruments Ltd.,**

6 Address: **Unit 48, Lancaster Way Business Park, Ely, Cambridgeshire, CB6 3NW, United Kingdom**

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Element Materials Technology, Notified Body number 2812, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential report **TRA-009172-33-00A, TRA-015648-33-00A, TRA-026382-32-00, TRA-044475-33-00A & TRA-051458-33-00A.**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-1:2014** **EN 60079-11:2012**

EN 60079-28:2015

Except in respect of those requirements listed at section 18 of the schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall include the following:

Ex II 2 G Ex db ib op is IIC T5 Gb Ta = -20 °C to +60 °C

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the Element Materials Technology Ex Certification Scheme.

S P Winsor, Certification Manager

Issue date: 2020-10-09

Element Materials Technology Rotterdam B.V.
Zekeringstraat 33, 1014 BV, Amsterdam, Netherlands
Registered in the Netherlands. Registered Office: PO Box 6854, 4802 HW, Breda, Netherlands
Company Reg No. 24170257

13 SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

14 CERTIFICATE NUMBER TRAC12ATEX0034X (incorporating variations V1 to V5)

15 Description of Product

The Michell Instruments OptiPEAK TDL600 is a Tuneable Diode Laser (TDL) Gas Analyzer is designed for online measurements by means of a tuneable diode laser analyzer to measure gas composition, typically of natural gas. The optical analysis technique provides a non-contact sensor measurement of the sample gas stream. A microprocessor controls all functions associated with sampling and data processing, providing a fully automatic and objective monitoring system.

The all of the control, processing, power supply and laser signal generation functions of the analyzer of the OptiPEAK TDL600 are housed within an ATEX and IECEx component certified flameproof enclosure (JCE model GUB5, certificate numbers IECEx TRC12.0002U / TRAC12ATEX0008U) suitable for use with IIC gases. Mounted directly behind, and inside of the flameproof enclosure glass window, is a controlling interface operated by through glass proximity switches and a display module.

A tubular cylinder, separate from the flameproof enclosure, provides the location at which an analysis measurement is made. A flexible conduit connects the flameproof enclosure to the tubular cylinder. The flexible conduit is terminated at the entry of the flameproof enclosure via an ATEX / IECEx certified barrier conduit gland. Through the flexible conduit passes an optical fibre transmitting the laser generated optical output signal and a hardwired photo-detected input signal. The tubular cylinder consists of a sealed cylindrical chamber with gas in and out ports through which passes the gas stream to be measured. At one end of the measurement chamber an additional segregated sealed chamber is provided in which is housed the connection for the flexible conduit, and the mount & termination points for the optical fibre and photo detector device.

The optical signal is emitted through a sealed window along the length of the chamber containing the gas sample stream. A passive optical device returns the optical signal back through the sealed window on to the photo detector device. A filter connected to the inlet port of the measurement cylinder removes any particulate matter greater than 1.0 micrometre.

The equipment can be supplied either uncoated, painted or powder coated.

Electrical input rating 90-260 Vac 50/60Hz 180W

16 Test Report No. (as added for this issue of the certificate): TRA-051458-33-00A.

17 Specific Conditions of Use

1. Do not open when an explosive gas atmosphere may be present.
2. Do not open when energised.
3. External cables shall be compatible with a maximum temperature of 90 °C.
4. Only suitably IECEx or ATEX certified (as appropriate to the equipment application) cable glands, conduit entry devices and blanking elements shall be used.
5. The enclosure must be earthed externally using the earth point provided.
6. Where painted or powder coated, the enclosures could present an electrostatic hazard. Clean only with a damp or anti-static cloth.

Attention is drawn to the operating and installation instructions which may contain useful information in relation to conditions of use.

18 Essential Health and Safety Requirements (Directive Annex II)

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

19 Drawings and Documents

The list of controlled technical documentation is given in Appendix A to this schedule.

20 Routine Tests

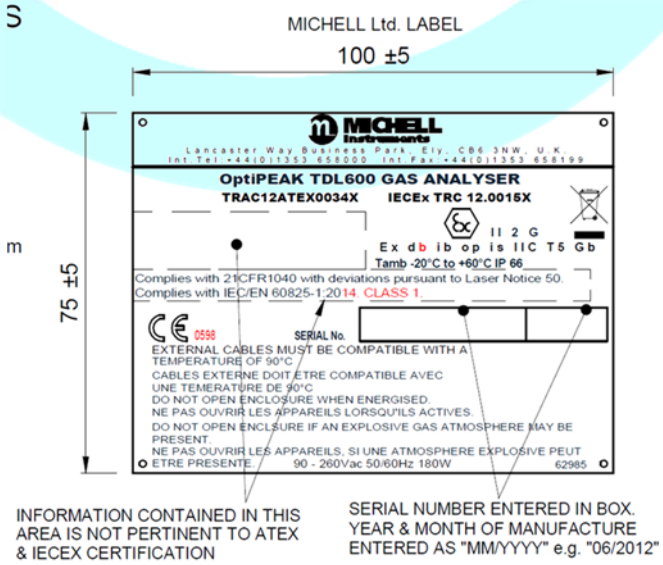
None.

21 Specific Conditions for Manufacture

None.

22 Photographs

23 Details of Markings



24 Certificate History

Original certificate	2013-02-13	First issue.
Variation V1	2013-09-16	Alternative laser diode and revised pcb.
Variation V2	2015-03-20	Minor drawings update.
Variation V3	2019-04-04	Change to bill of material – alternative resistor specification
Variation V4	2019-11-01	This certificate was originally issued by Notified Body number 0891 under Directive 2014/34/EU. The technical file has been transferred to Element Notified Body number 2812 without further assessment or evaluation.
Variation V5	See page 1	Update of standards to latest edition. Current limiting resistor protecting secondary cell changed

This certificate is a consolidated certificate and reflects the latest status of the certification, including all variations and amendments.

25 Notes to CE marking

In respect of CE Marking, Element Materials Technology accepts no responsibility for the compliance of the product against all applicable Directives in all applications.

26 Notes to this certificate

Element Materials Technology certification reference: ERO032645P54 (GU-MILQ-005).

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.

Notified Body number 2812 is the designation for Element Materials Technology Rotterdam BV.

In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variation certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

27 Conditions for the validity of this certificate

This certificate remains valid for so long as:

(i) The equipment listed in section 4 is manufactured in accordance with the documents listed in Appendix A of this certificate.

(ii) The standards listed in section 9 of this certificate continue to satisfy the Essential Health and Safety Requirements of Annex II of Directive 2014/34/EU and the generally acknowledged state of the art (e.g. as determined by the publishers of those standards).

SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

CERTIFICATE NUMBER TRAC12ATEX0034X (incorporating variations V1 to V5)

APPENDIX A - TECHNICAL DOCUMENTS

Title:	Drawing No.:	Rev. Level:	Date:
OptiPEAK TDL600 Gas Analyser IECEx and ATEX Certification Drawing (4 pages)	Ex90498	4	2020-07-28
TDL600 OptiPEAK - User's Manual – Appendix G (2 pages)	97319	4.5	2020-02
"ib" Protection circuit PCB details	Ex83357	2	2018-11-22
OptiPEAK TDL600 ib protection circuit PARTS LIST	Ex83357	2	2018-11-22
Signal Input ib protection circuit PARTS LIST	EX83886	2	2018-11-22
ib PROTECTION CIRCUIT PCB DETAILS	Ex83886	2	2018-11-22